

What is claimed is:

1. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system for collecting an evaporated fuel occurring inside a fuel tank into a canister and introducing the evaporated fuel into an intake passage of an internal combustion engine, comprising:

first diagnosis means for serially comparing a first restoring pressure amount measured after a fault diagnosis object region of said fuel evaporation/dissipation prevention system is brought into a reduced pressure state, with a first judgment value and with a second judgment value greater than said first judgment value;

second diagnosis means for measuring a second restoring pressure amount by sealing said fault diagnosis object region after an atmospheric pressure is introduced into said fault diagnosis object region when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value or said second judgment value, then comparing said second restoring pressure amount with a third judgment value when said first restoring pressure amount is greater than said first judgment value but is smaller than said second judgment value, and comparing said second restoring pressure amount with a fourth judgment value greater than said third judgment value when said first restoring pressure amount is greater than said second judgment value; and

abnormality judgment means for judging said fuel evaporation/dissipation prevention system as being abnormal when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value but is smaller than said second judgment value and said second restoring pressure amount measured by said second diagnosis means is smaller than said third judgment value, or when said first restoring pressure amount is greater than said second judgment value and said second restoring pressure amount is smaller than said fourth judgment value.

2. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system for collecting an evaporated fuel occurring inside a fuel tank into a canister and introducing the evaporated fuel into an intake passage of an internal combustion engine, comprising:

first diagnosis means for comparing a first restoring pressure amount measured after a fault diagnosis object region of said fuel evaporation/dissipation prevention system is brought into a reduced pressure state, with a first predetermined value;

second diagnosis means for comparing a second restoring pressure amount measured under a sealed state of said fault diagnosis object region after an atmospheric pressure is introduced into said fault diagnosis object region, with a second predetermined value set in accordance with said first restoring pressure amount when said first restoring pressure amount measured by said first diagnosis means is greater than said first predetermined value; and

abnormality judgment means for judging said fuel evaporation/dissipation prevention system as being abnormal when said first restoring pressure amount measured by said first diagnosis means is greater than said first predetermined value and said second restoring pressure amount measured by said second diagnosis means is smaller than said second predetermined value.

3. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system according to claim 2, wherein said first diagnosis means measures said first restoring pressure amount after a set time passes from completion of pressure reduction of said fault diagnosis object region, and said second diagnosis means sets said second predetermined value to a greater value when said first restoring pressure amount measured by said first diagnosis means is greater.

4. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system for collecting an evaporated fuel occurring inside a fuel tank into a canister and introducing the evaporated fuel into an intake passage of an internal combustion engine, comprising:

first diagnosis means for serially comparing a first restoring pressure amount measured after a fault diagnosis object region of said fuel evaporation/dissipation prevention system is brought into a reduced pressure state, with a first judgment value and a second judgment value greater than said first judgment value;

second diagnosis means for measuring a second restoring pressure amount by sealing said fault diagnosis object region after an atmospheric pressure is introduced into said fault diagnosis object region when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value or said second judgment value, then comparing said second restoring pressure amount with a third judgment value when said first restoring pressure amount is greater than said first judgment value but is smaller than said second judgment value, and comparing said second restoring pressure amount with a fourth judgment value greater than said third judgment value when said first restoring pressure amount is greater than said second judgment value;

abnormality judgment means for judging said fuel evaporation/dissipation prevention system as being abnormal when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value but is smaller than said second judgment value and said second restoring pressure amount measured by said second diagnosis means is smaller than said third judgment value, or when said first restoring pressure amount is greater than said second judgment value and said second restoring pressure amount is smaller than said fourth judgment value; and

correction means for correcting and decreasing said fourth judgment value to be compared by said second diagnosis means with said second restoring pressure amount when the atmospheric pressure changes and decreases while said first diagnosis means measures said first restoring pressure amount.

5. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system according to claim 4, wherein said correction means corrects and decreases said fourth judgment value in accordance with the decrement of the atmospheric pressure while said first diagnosis means measures said first restoring pressure amount.

6. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system according to claim 4, wherein said correction means replaces said fourth judgment value by said third judgment value when the atmospheric pressure changes and decreases beyond a predetermined pressure while said first diagnosis means measures said first restoring pressure amount.

7. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system for collecting an evaporated fuel occurring inside a fuel tank into a canister and introducing the evaporated fuel into an intake passage of an internal combustion engine, comprising:

first diagnosis means for serially comparing a first restoring pressure amount measured after a fault diagnosis object region of said fuel evaporation/dissipation prevention system is brought into a reduced pressure state, with a first judgment value and with a second judgment value greater than said first judgment value;

second diagnosis means for measuring a second restoring pressure amount by sealing said fault diagnosis object region after an atmospheric pressure is introduced into said fault diagnosis

object region when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value or said second judgment value, then comparing said second restoring pressure amount with a third judgment value set in accordance with said first restoring pressure amount when said first restoring pressure amount is greater than said first judgment value but is smaller than said second judgment value, and comparing said second restoring pressure amount with a fourth judgment value set in accordance with said first restoring pressure amount when said first restoring pressure amount is greater than said second judgment value;

abnormality judgment means for judging said fuel evaporation/dissipation prevention system as being abnormal when said first restoring pressure amount measured by said first diagnosis means is greater than said first judgment value but is smaller than said second judgment value and said second restoring pressure amount measured by said second diagnosis means is smaller than said third judgment value, or when said first restoring pressure amount is greater than said second judgment value and said second restoring pressure amount is smaller than said fourth judgment value; and

correction means for correcting and decreasing said third judgment value or said fourth judgment value to be compared by said second diagnosis means with said second restoring pressure amount when the atmospheric pressure changes and decreases while said first diagnosis means measures said first restoring pressure amount.

8. A fault diagnosis apparatus of a fuel evaporation/dissipation prevention system according to claim 7, wherein said correction means corrects and decreases said third judgment value or said fourth judgment value in accordance with the decrement of the atmospheric pressure during measurement of said first restoring pressure amount by said first diagnosis means.